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|-----------------|-------------|----------------------|---------------------|
| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
| 09/759,119      | 01/11/01    | HARARI               | M-10187-360         |

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MM91/0402

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| EXAMINER |
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PHAN, T

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| ART UNIT | PAPER NUMBER |
| 2818     |              |

DATE MAILED: 04/02/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.  
09/759,119

Applicant(s)  
HARARI ET AL.

Examiner  
TRONG PHAN

Group Art Unit  
2818



☒ Responsive to communication(s) filed on 1/11/01

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-77 is/are pending in the application.

Of the above, claim(s) 1-62 is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 63-77 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first group of the plurality of non-volatile multi-level memory cells being coupled in parallel between a first bitline and a reference potential, the second group of the plurality of non-volatile multi-level memory cells being coupled in parallel between a second bitline and the reference potential, a plurality of sense circuits including at least a first sense circuit, a second sense circuit and a third sense circuit as recited in claims 63, 65, 67 and 70; the limitations as recited in claims 75-76; and a sense circuit which compares information indicating data stored in a memory cell with a first, a second and a third reference parameter in parallel in a normal read operation as recited claim 73 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

***Specification***

2. A substitute specification is required pursuant to 37 CFR 1.125(a) because the preliminary amendment filed on 1/11/2001 proposed too many changes to the specification.

A substitute specification filed under 37 CFR 1.125(a) must only contain subject matter from the original specification and any previously entered

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amendment under 37 CFR 1.121. If the substitute specification contains additional subject matter not of record, the substitute specification must be filed under 37 CFR 1.125(b) and must be accompanied by: 1) a statement that the substitute specification contains no new matter; and 2) a marked-up copy showing the amendments to be made via the substitute specification relative to the specification at the time the substitute specification is filed.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 63-72 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 63-77 are considered to be vague and indefinite because the specification does not describe: the first group of the plurality of non-volatile multi-level memory cells being coupled in parallel between a first bitline and a reference potential, the second group of the plurality of non-volatile multi-level memory cells being coupled in parallel between a second bitline and the reference

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potential, a plurality of sense circuits including at least a first sense circuit, a second sense circuit and a third sense circuit, all the steps of settling a parameter, verifying, and reading status in the method of operating the electrically alterable non-volatile multi-level memory device as recited in claims 63, 65, 67 and 70; a sense circuit which compares information indicating data stored in a memory cell with a first, a second and a third reference parameter in parallel in a normal read operation, the first threshold voltage range indicates an erase state and the second, third, and fourth threshold range indicate program states different from the erase state, and the relationship among first to fourth threshold ranges with first and second verify reference parameters as recited claim 73; and the limitations as recited in claims 75-76.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

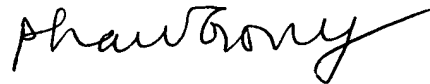
Morton et al., 6,128,224, and Yoshikawa, 5,933,366.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Trong Phan* whose telephone number is (703) 308-4870.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (703) 308-4910. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



**TRONG PHAN  
PRIMARY EXAMINER**

March 28, 2001